

## Attachment 2

# Summary of Public Comments Received on Indiana's Draft 2014 303(d) List of Impaired Waters and the Consolidated Assessment and Listing Methodology Published on April 30, 2014 and IDEM's Responses

The Indiana Department of Environmental Management (IDEM), Office of Water Quality is required by Section 303(d) of the federal Clean Water Act to assess its waters for compliance with the state's water quality standards and periodically prepare and make public a list of those waters not meeting water quality standards. On April 30, 2014, IDEM published its draft 2014 303(d) List of Impaired Waters with a ninety (90) day public comment period from April 30 through July 29, 2014, for submission of comments on the draft 303(d) List of Impaired Waters. IDEM received comments from the following parties during the comment period:

Alliance for the Great Lakes (AGL)  
Sierra Club, Hoosier Chapter (SC)

**Comment:** It appears that IDEM hasn't reviewed its [TMDL] priorities in a number of years. The exact same language used to explain its priorities that appears in the 2014 draft may be found in IDEM's 2010 and 2012 303(d) lists (2010 303(d) Attachment 7, p. 7-1; 2012 303(d) Attachment 2, p. 2-10). (SC)

**IDEM Response:** *In 2012, IDEM re-evaluated its TMDL priorities and developed a program plan of action for TMDL prioritization, development, and implementation based on the primary goal of making measurable improvements in water quality by doing the following: 1) developing a TMDL document that is implementable by stakeholders, 2) instituting a TMDL development process that supports and augments other OWQ programs and objectives, and 3) developing a TMDL implementation tracking system for following-up to determine effectiveness. IDEM's goal is to develop TMDLs that when implemented, will result in measurable improvements in water quality. To realize this goal, prioritization will be driven by analysis of the data and knowledge of activities and stakeholders in the watershed as well as other agency program activities that predict water quality improvements. Since then, IDEM has been working to further refine its prioritization process based on U.S. EPA's National Water Program Guidance (U.S. EPA, 2015) and U.S. EPA's Long Term Vision for Assessment, Restoration, and Protection under the Clean Water Act Section 303(d) Program (U.S. EPA, 2013).*

**Comment:** The U.S. Environmental Protection Agency published a *PCB TMDL Handbook* on December 20, 2011<sup>1</sup>. For IDEM to continue to maintain that "EPA has not provided adequate guidance to states regarding how to develop a TMDL to restore a waterbody with fish tissue impairments" in the 2012 and now the draft 2014 303(d) lists suggests that the department is either woefully ill-informed about TMDL developments nationally or it is intentionally misleading the public. At a minimum, IDEM should mention the existence of the handbook. If it

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<sup>1</sup> [http://water.epa.gov/lawsregs/lawsguidance/cwa/tmdl/upload/pcb\\_tmdl\\_handbook.pdf](http://water.epa.gov/lawsregs/lawsguidance/cwa/tmdl/upload/pcb_tmdl_handbook.pdf)

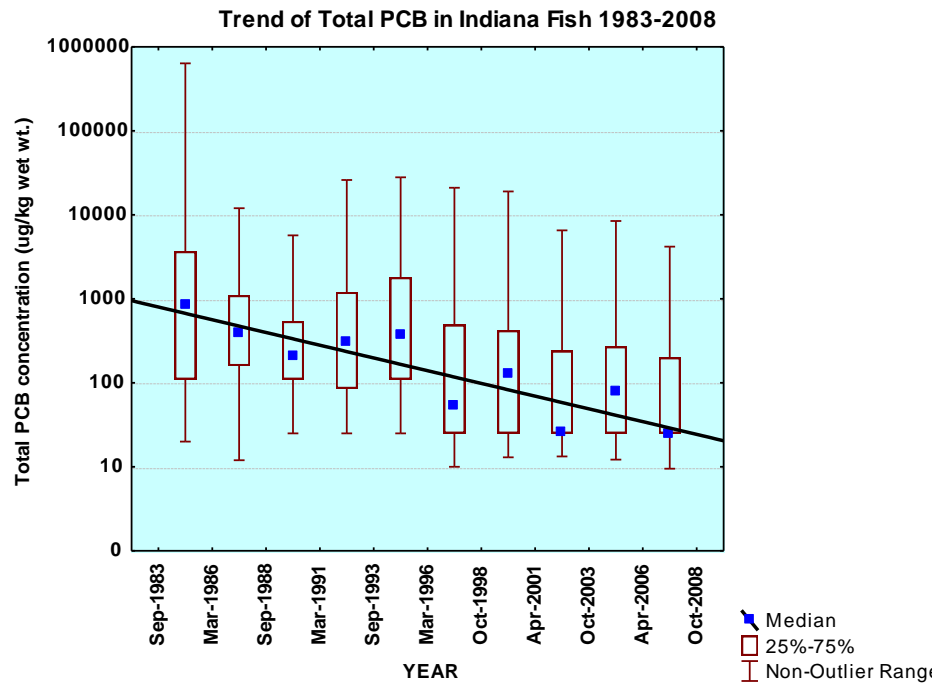
feels that the handbook does not provide “adequate guidance” it should explain why it thinks this. If it continues to insist that “a TMDL is not the appropriate approach for addressing these impairments”, it should discuss what approach it does consider appropriate. (SC)

***IDEM Response:*** *IDEM has reviewed the U.S. Environmental Protection Agency’s PCB TMDL Handbook and, as stated in IDEM’s Integrated Report attachments, has found the approach in this guidance of limited effectiveness in addressing PCBs.*

*Where site remediation is not occurring through CERCLA or the State Clean Up Program, IDEM asserts that natural attenuation is the best approach to the restoration of waters impaired for PCBs in fish tissue. IDEM has been monitoring the streams in Indiana most heavily impacted by PCBs (those for which clean-up activities have or are happening) as well as other streams identified on Indiana’s 303(d) list as impaired for PCBs in fish tissue for more than three decades. The data from this monitoring have provided a significant body of evidence that strongly suggests PCB concentrations in fish tissue are going down even in waters where no active remediation is or has taken place. In the 2014 Integrated Report submitted on April 1, 2014, IDEM provided evidence with its evaluation of data from 1983-2008 that supports its position that time is a successful remediation strategy for PCBs.*

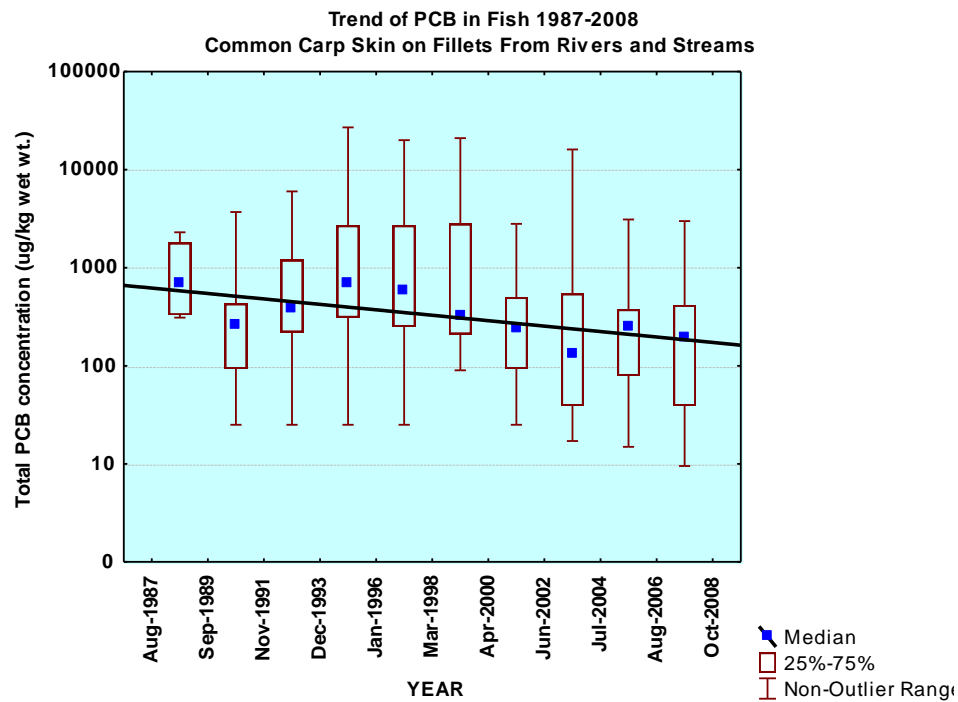
*The most effective remediation strategy for PCBs – other than natural attenuation– is physical removal of the contaminated sediments. Dredging makes sense for some waters, especially for those that are highly contaminated. However, a large number of streams on Indiana’s 303(d) list for PCBs in fish tissue are smaller streams. Dredging every stream impaired for PCBs in fish tissue would be extremely damaging to the habitat and biota and would likely impair the streams’ ability to support aquatic life for a considerable amount of time. Additionally, it would be costly. Thus, for these smaller waterbodies, dredging would do more harm than good. Natural attenuation of this banned substance poses less risk to the environment and is a more cost effective approach to addressing PCB impairments than dredging.*

### *Trend of Total PCB in Indiana Fish 1983-2008.*



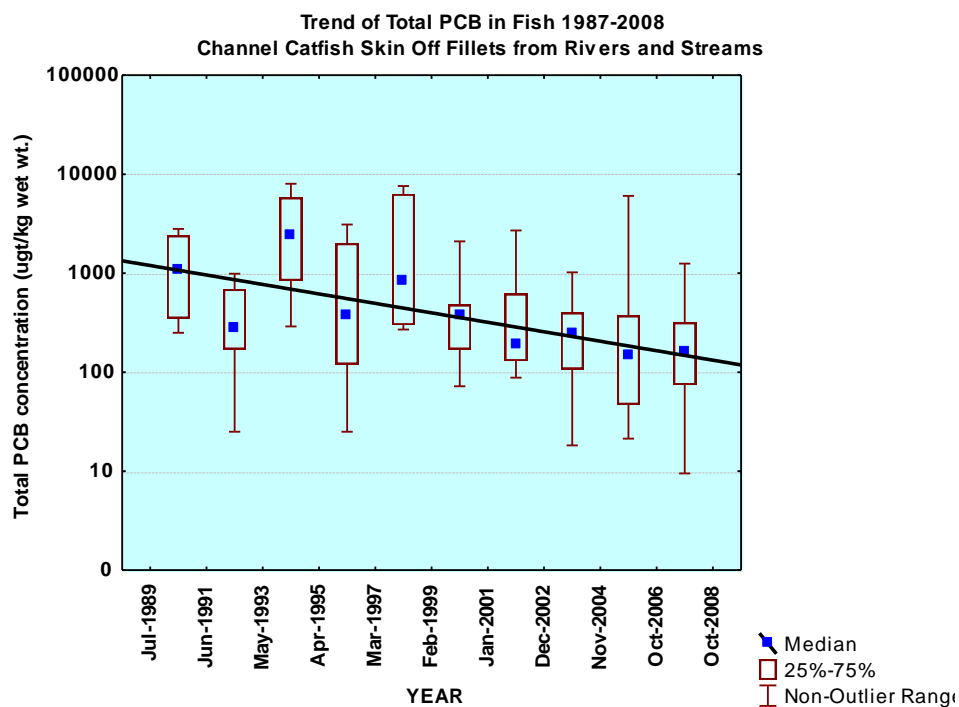
Source: IDEM 2014 Integrated Report.

### *Trend of PCB in Fish 1987-2008 for Common Carp Skin-on Fillets from Rivers and Streams.*



Source: IDEM 2014 Integrated Report.

*Trend of PCB in Fish 1989-2008 for Channel Catfish Skin-off Fillets from Rivers and Streams.*



*Source: IDEM 2014 Integrated Report.*

**Comment:** IDEM places waters with PCB and/or mercury fish-tissue impairments in category 5B saying “the state believes that a conventional TMDL is not the appropriate approach.” It adds that “the state will continue to work with the general public and the U.S. EPA on actual steps needed ultimately to address these impairments.” We repeat the question we raised in our comments on this language in the 2012 303(d) list: What has IDEM done in the past two years to work with the general public or the E.P.A to take “actual steps” to address fish tissue impairments? (SC)

**IDEM Response:** *With regard to mercury in fish tissue, IDEM revised its methodology in accordance with U.S. EPA guidance in order to gain a better understanding of where consumption of fish poses the greatest health risk due to mercury contamination. IDEM maintains that in order to address any environmental problem, it must first have an accurate assessment of where those problems exist.*

*With regard to PCBs, IDEM has reviewed U.S. EPA’s PCB TMDL handbook and continues to evaluate approaches used in other states for their potential use is developing TMDLs for fish tissue impairments here in Indiana. In 2014, IDEM submitted a proposal to U.S. EPA for contractor support to conduct a statewide trend analysis of PCBs in fish tissue to help IDEM identify areas where PCB concentrations have remained constant or increased over time. IDEM is also currently evaluating the feasibility of including PCB impairments in its TMDL for the Mississinewa River, which will be developed over the course of the next two years.*

*IDEM has maintained a strong and dedicated monitoring effort to continue better understanding contaminants in fish, communicating that information to other agencies and to the interested general public, working with the Indiana State Department of Health to develop fish consumption advisories, and communicating risks as well as benefits from eating Indiana wild caught fish. Continuing to understand the status and trends of contaminants, and communicating health risk information are the first lines of defense in protecting public health for these particular contaminants of concern.*

**Comment:** PCB fish tissue contamination is the third largest cause of impairment for Indiana's flowing waters as measured in impaired stream miles (after *E. coli* and impaired biotic communities) and by far the largest cause of impairment for the state's lakes (38,290 acres, compared to 16,385 acres for the next two largest causes, chlorophyll-a and taste and odor). See tables 11 and 20 in Appendix A of the *Integrated Water Monitoring and Assessment Report* ("Integrated Report"). On page 49 of the Integrated Report, IDEM reports that PCB levels in fish tissue have declined over a 25-year period, which it depicts in Appendix C, Figures 8, 9 and 10. However, the apparent declines may be a construct of the year used as the first measurement, which are different in each figure. In any case, the most recently reported levels remain well above recommended health guidelines. People should not have to wait several more decades of inaction on IDEM's part in hopes that the levels diminish to a point that it becomes once again safe to eat fish.(SC)

*IDEM Response: The declines in PCB concentrations shown in the figures provided in the 2014 Integrated Report are based on all the data available at the time the analysis was conducted; thus, the first measurement shown in each figure is the first result available for the associated data type.*

*IDEM has been quite active in abating site specific PCBs, and some examples of remediation success stories follow:*

#### **Polychlorinated Biphenyls in the Bloomington and Bedford Areas**

*Sampling of fish, water, and sediments for PCB contamination in Clear Creek, Salt Creek, Pleasant Run, and the East Fork White River in Monroe and Lawrence counties in the late 1970s and 1980 revealed high levels of PCBs at localities in these streams. In the mid-1970s, effluent from the Bloomington sewage treatment facility discharging to Clear Creek, and the General Motors Central Foundry plant discharging to Pleasant Run near Bedford were found to contain higher than acceptable levels of PCBs. Clear Creek, and Salt Creek downstream from Monroe Reservoir and the East Fork White River as far down as Williams, IN were heavily contaminated with PCBs. Clear Creek received PCB contaminated effluent from the Winston Thomas WWTP. In addition to these, PCBs were found to be emanating from local Bennett's, Lemon Lane and Neal's landfills causing PCB contamination in Stouts Creek, Bean Blossom Creek, Conard's Branch, and Richland Creek as well. All of these landfills have a history of receiving PCB wastes. The PCBs in the fish of Pleasant Run Creek were the highest we had ever measured anywhere in Indiana fish. Pleasant Run added to the PCB contamination of lower Salt Creek and the East Fork White River.*

**Fish Consumption Advisories (NO CONSUMPTION due to PCBs)**

1978: Clear Creek, Salt Creek downstream of Monroe Reservoir Dam, and East Fork White River from confluence with Salt Creek to Williams, IN

1982: Richland Creek in Monroe, Owen, and Greene counties.

1987: Pleasant Run Creek, Lawrence County

Considerable monies have been spent over the last three plus decades by the City of Bloomington, the State of Indiana, U.S. EPA, Westinghouse Corporation, and General Motors to eliminate the direct discharge of PCBs in these streams. These efforts have included stream sediment and soil removals, capping, and capturing and treating PCB contaminated leachate from the landfills to prevent continued contamination of these affected streams. The result of these activities has translated to a continued slow, but sure reduction of PCBs in the fish from these streams. For example, Pleasant Run near Bedford, which had as much as 390 parts per million PCBs in the fish in the 1980s and 90s have recently been shown to have levels of PCBs now less than 1.0 parts per million in the fish. Clear Creek has seen a reduction of PCBs in the fish by an order of magnitude since the early 1990s. Analysis on fish samples collected in 2014 from Clear Creek and upper Richland Creek with the U.S. EPA showed PCB reductions in the fish ranging from 89-98% and by as much as 97% since the early 1980s respectively with average concentrations going from as much as 19 parts per million in the fish to as low as 0.2 parts per million. Although there is still a ways to go for the fish in these streams before they can be considered PCB free, these streams are examples of the success of remediation efforts in reducing PCBs in the local fish populations.

There are a number of other streams across the State with similar stories. In the 1980s a number of discharges were identified as contributing to PCB contamination in the Kokomo Creek/Wildcat Creek, Kokomo, IN; Little Sugar Creek/Sugar Creek near Crawfordsville, IN; Little Mississinewa River near Union City, IN; Elliott Ditch/Wea Creek and the Wabash River near Lafayette; Stoney Creek and the West Fork of White River near Noblesville and Indianapolis to name a few. PCB contamination from Stoney Creek caused NO CONSUMPTION advisories in Stoney Creek and limited consumption advisories in the West Fork White River from Noblesville to the Marion County line. PCBs contamination from the Continental Steel site in Kokomo, IN necessitated NO CONSUMPTION FCA advice in Kokomo Creek and the Wildcat Creek all the way to the Wabash River. The Continental Steel was remediated under Superfund. Recent testing for PCBs in fish from Kokomo Creek showed levels in the low parts per billion range. Although a NO CONSUMPTION FCA still extends in the Wildcat Creek through Carroll County, the FCA for Wildcat Creek in Tippecanoe County is now listing for limited consumption.

Remediation efforts in all of these locations have aided in the reduction of PCBs in the streams and fish. Many of these streams which have been NO CONSUMPTION FCA waterbodies are being considered for removal of the NO CONSUMPTION status to limited consumption advice. Although changes are slow, and numerous samples across multiple years are required before decisions on reductions in NO CONSUMPTION FCA levels occurs, the trend of PCBs in these historically contaminated streams continue to be on positive downward slides.

**Comment:** Ironically, the first waterbody where IDEM removed an impairment was Pigeon Creek in southwest Indiana, which the department had placed on the 303(d) list in 1996 due to high levels of the organochlorine pesticide chlordane found in fish tissue. Through the cooperative efforts of residents and government agencies at the local, state and federal level, and with the support of Section 319 funding, the impacted community created a watershed plan and installed more than 50 agricultural best management practices (BMP) between 1997 and 2001 to reduce soil erosion, which was the vehicle that carried the banned pesticide into the water. By 2005 IDEM determined that chlordane levels in fish tissue had dropped sufficiently that the impairment could be removed from the 303(d) list. While in this case IDEM did not prepare a TMDL, the actions taken were consistent with TMDL development and implementation.<sup>2</sup> Given this history of success in addressing fish tissue contamination, we believe IDEM has delayed long enough on PCB fish tissue impairments. (SC)

**IDEM Response:** *Your position on IDEM's approach to PCB fish tissue impairments is noted and is being taken into account as IDEM further refines its prioritization process for TMDL development. IDEM's application to U.S. EPA for contractor assistance on a statewide trend analysis of PCB in fish tissue has not been funded to date. If and when it is, the public will be notified of this project through IDEM's notice of public comment period for the next draft 303(d) List of Impaired Waters and Integrated Report.*

**Comment:** [IDEM] is working on TMDLs for three waterbodies at present: the upper Mississinewa, White Lick Creek and southern Whitewater River. IDEM lists numerous PCB fish tissue impairments for both the Mississinewa and Whitewater rivers. The department has information about at least one source of PCB contamination for the Mississinewa since one of its tributaries, the Little Mississinewa, is the site of a Superfund cleanup for PCBs in Union City.<sup>3</sup> IDEM was a partner in the cleanup, which was completed in 2009. It shares responsibility with the E.P.A for post-remediation monitoring, which includes sampling sediments and fish downstream.<sup>4</sup> Since it has already worked on PCB contamination in this watershed, it should add the Mississinewa PCB impairments to the TMDL. (SC)

**IDEM Response:** *IDEM is exploring a Category 4B listing for the PCB impairments in the Mississinewa River. As the commenter noted, the primary source of PCBs in this watershed has been remediated, and IDEM continues to monitor fish tissue regularly in this watershed as part of its contaminants monitoring program. If IDEM finds that moving this impairment from Category 5B to Category 4B is supported by the evidence, the case for this listing change will be made in the TMDL document for the Mississinewa River. The public will have an opportunity to review and comment on this proposed change when the draft Mississinewa TMDL, which is currently under development, is published for a 30-day public comment period prior to its submittal to U.S. EPA for approval.*

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<sup>2</sup> [http://water.epa.gov/polwaste/nps/success319/in\\_pigeon.cfm](http://water.epa.gov/polwaste/nps/success319/in_pigeon.cfm)

<sup>3</sup> [http://www.epa.gov/region5/cleanup/mississinewa/pdf/lmr\\_fs\\_200108.pdf](http://www.epa.gov/region5/cleanup/mississinewa/pdf/lmr_fs_200108.pdf)

<sup>4</sup> [http://www.epa.gov/region5/cleanup/mississinewa/pdf/lmr\\_5yr\\_201010.pdf](http://www.epa.gov/region5/cleanup/mississinewa/pdf/lmr_5yr_201010.pdf)

**Comment:** While we support continuing to address *E. coli* pollution with TMDLs, particularly because implementation of these TMDLs frequently also reduces other pollutants such as nutrients, we question the wisdom of prioritizing *E. coli* impairments over PCB fish tissue impairments. Since *E. coli* is only an indicator of the possible presence of human pathogens and is meant to provide protection for full-body contact with the water, it makes no sense to prioritize them in some sections of a waterbody where human pathogens are less likely to be found in abundance or where few people have full-body contact with the water. In waterbodies like the Mississinewa, where fishing is known to occur and where sources of PCB contamination of fish have been identified, the highest priority for TMDL development should be addressing this known human health hazard. (SC)

**IDEM Response:** *IDEM remains open to the idea of developing a PCB TMDL for larger waters where fishing is known to occur and is currently evaluating the feasibility of including PCB impairments in its TMDL for the Mississinewa River.*

**Comment:** As for mercury fish tissue impairments, we have little reason to hope that IDEM will seek to remedy this problem. We disagree with the use of a “trophic level, consumption rate-weighted arithmetic mean result” (Attachment 1, p. 53) to determine mercury fish tissue impairments. We think that this new method (allowed by guidance that the E.P.A issued in 2010) of listing mercury-impaired waters significantly under-represents the number of waters with fish exposed to methylmercury. However, individual TMDLs are probably not the best way of dealing with this problem. Since the major source of mercury contamination of our waters is through air deposition that results from the burning of coal for electric power generation, it would be better to remedy the situation through a statewide TMDL that would require retirement of coal-burning power plants. We realize that IDEM is not about to pursue such a remedy, so we rely on new rules under the Clean Air Act to reduce mercury and carbon emissions, along with the changing economics of power generation that makes burning coal increasingly unprofitable, to gradually reduce mercury fish tissue impairments despite IDEM’s opposition to those rules. (SC)

**IDEM Response:** *The reason U.S. EPA requires states to include waters with impairments due to mercury in fish tissue on their 303(d) lists is based on concerns regarding human consumption not any deleterious effects that exposure to mercury might have on aquatic life. The exposure of fish to mercury is not the same thing as human health risk associated with the consumption of fish. IDEM’s revised methods for assessment of fish consumption take into account important factors that more accurately translate into human health risk, such as consumption rates and the types of fish that might be consumed and thus provides a more accurate assessment of the problem mercury might be creating with regard to consumption.*

**Comment:** In May 2014 the E.P.A issued its final decision adding approximately 140 metal-impaired stream segments to IDEM’s 2010 303(d) list. Most of these waters are impaired for aluminum and/or iron. Some are also impaired for copper, lead and/or zinc. IDEM identified these impairments through the use of derived criteria for dissolved metals or with the use of criteria for total metals. However, at the request of self-interested stakeholders, namely Alcoa,



the Indiana Coal Council and the Indiana Energy Association<sup>5</sup>, IDEM decided to remove these impaired waters from the 2010 303(d) list. Although the E.P.A signaled its disagreement with IDEM's decision, the department refused to add these waters to its 2012 list and obstinately continues that refusal with the 2014 list. IDEM should add these impaired waters to its 2014 303(d) list. Its continued refusal to do so is clear evidence that the department favors the interests of the coal industry and coal-burning electric utilities over the public good. (SC)

***IDEM Response:*** *IDEM is keenly interested in public input on its assessment and listing methodology and takes any concerns expressed regarding the defensibility of its methods very seriously. IDEM received numerous public comments during the public comment period for its draft 2010 303(d) list. On the issue of listing waters based on total metals results as opposed to dissolved metals results, there were many and all were in opposition to this approach. Interestingly, there were no comments in support of IDEM's continued use of this approach. IDEM did receive public comments challenging its 2010 decision during the public comment period for the 2012 303(d) list. However, IDEM evaluated these comments and found that they provided no new information that had not already been considered prior to making its decision in 2010.*

*IDEM's decision for changing its methods for metals assessments and listing was made after careful consideration of the facts provided by the public, the scientific defensibility of both approaches to metals assessment and the resulting policy implications of each. IDEM's rationale for its decision can be found in previous responses to U.S. EPA comments and public comments on both the 2010 and 2012 303(d) list and will not be repeated here. Those interested in evaluating IDEM's reasons for its decision with regard to metals assessments and listing are invited to review these documents, which along with all public comments received, are available online at <http://www.in.gov/idem/nps/3889.htm> for the 2010 cycle and at <http://www.in.gov/idem/nps/3937.htm> for the 2012 cycle.*

***Comment:*** IDEM's descriptions of its listing categories are inaccurate. These categories, which are derived from E.P.A guidance, do not provide meaningful information for differentiating the quality of the state's waterbodies and for determining IDEM's ability to assess that quality.

For example, Category 1 is for waters "that meet the requirements of the state's assessment and listing methodology and support a determination that all WQS are attained and no designated use is threatened." In other words, a waterbody that meets all of its designated uses should be listed in Category 1. Category 2 is for waters that meet some but not all of their designated uses. However, since IDEM assigns a category number for each of the three or four uses that a waterbody might have—safe for full-body contact (recreational use, *i.e.*, swimming), safe for fishing and consuming the fish caught (fishable use), safe for aquatic organisms (aquatic life use), and safe as a source of public drinking water (public water supply)—it never assigns a water to Category 1. (SC)

***IDEM Response:*** *The categorization scheme was originally developed by U.S. EPA in 2002. At that time, states were allowed to place a waterbody in only one category based on the worst*

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<sup>5</sup> Their comment letters may be accessed on the IDEM 2010 303(d) web page: <http://www.in.gov/idem/nps/3889.htm>

*case. For example, if a waterbody had a recreational use impairment but was otherwise meeting one or more of its other designated uses, the waterbody would have to be reported as impaired. In response to state concerns that this approach did not recognize high quality waters or water quality improvements, U.S. EPA allowed states to begin separately placing a given waterbody into one of the five categories for each designated use. IDEM believes this approach provides a more accurate characterization of water quality in Indiana.*

*The purpose of the categories in the Consolidated List is to provide all the information IDEM has to date regarding the designated use support status of all Indiana waters.*

*IDEM's ability to assess water quality and its methods for doing so are described in detail in its Consolidated Assessment and Listing Methodology (CALM).*

*With regard to the example provided, if a waterbody has been assessed for all designated uses and found to be fully supporting of each, IDEM would assign each use to Category 1. The fact that there are no Category 1 waters is not a function of how IDEM categorizes its waters.*

*Rather, it is due to the fact that very few waters have been assessed for all three designated uses. Category 1 is not applicable unless all uses are assessed.*

*As the commenter points out, there are errors in IDEM's Consolidated List. IDEM's review of its 303(d) list and Consolidated List with the Assessment Database from which the category information is drawn is an ongoing process. IDEM will review the Consolidated List for the streams in question to determine what if any corrections are necessary and will do the same for any additional inconsistencies the commenter shares with IDEM.*

**Comment:** Category 3 is for waters for which IDEM has “[i]nsufficient data and information to determine if any designated use is attained.” The description goes on to say that “[s]tates should schedule monitoring on a priority basis to obtain data and information necessary to classify these waters as Category 1, Category 2, Category 4, or Category 5.” Yet the vast majority of water segments listed in the 305(b) spreadsheet are assigned to Category 3 for three uses—swimming, fishing and aquatic life. Frighteningly, most waters that have a designated public water supply use are also listed in Category 3 for that use. Given the vast number of water segments in this category and IDEM's increasingly limited resources for assessing water quality, the admonishment to prioritize these waters for assessment and assignment to other categories is fatuous. (SC)

**IDEM Response:** *The requirement to prioritize Category 3 waters for assessment and assignment to other categories comes from U.S. EPA 2006 Integrated Report guidance, which is available online at: [http://water.epa.gov/lawsregs/lawsguidance/cwa/tmdl/2006IRG\\_index.cfm](http://water.epa.gov/lawsregs/lawsguidance/cwa/tmdl/2006IRG_index.cfm). IDEM has explored the question of how to get to those waters not yet monitored. In 2013, IDEM completed an analysis of the resources needed to site specifically monitor every waterbody in the state for all designated uses and concluded that even if the estimated \$75 million were available to collect the samples and landowners granted access to their properties, there would not be enough laboratory space or trained aquatic biologists in Indiana to collect and analyze the samples. For example, IDEM currently collects approximately 3,500 chemistry samples from Indiana waters each year. To monitor all waters using a basin rotation over a nine-year period, which would make the most efficient use of time and logistical funds, IDEM would have to*

*collect 3000-4000 samples per month resulting in a minimum ten-fold increase in the number of samples going to Indiana laboratories for analysis.*

**Comment:** The 303(d) list does not identify the waters that have had impairments removed due to successful implementation of a TMDL. For that information we need to refer to the Integrated Report, which has a section on “Successes in Water Quality Management” beginning on page 25. That section states that since 2007 IDEM has reported water quality improvements in nine twelve-digit watersheds and one eight-digit watershed impacting nearly 160 stream miles.

The next section describes one particular “success story,” that of Jenkins Ditch, a 2.13-mile headwater tributary in the South Fork Wildcat Creek subwatershed. The section describes the development and implementation of a TMDL for *E. coli*, total suspended solids, nitrate-nitrite and impaired biotic community. It concludes that subsequent IDEM monitoring indicated that the implementation of non-point source BMPs had corrected the impairment and “IDEM removed the Jenkins Ditch segment from its list of impaired waters in 2012, the first time that it has moved a water with an Impaired Biotic Communities impairment from Category 4a to Category 2 due to an improvement in water quality.” However, on line 2511 of the 2014 Consolidated List (Appendix F of the Integrated Report), Jenkins Ditch is still listed as 4A for impaired biotic communities and Category 3 for its recreational and fishable uses. We have to assume that this is the same Jenkins Ditch although its assessment unit identification number in the list is INB0738\_T1001 while the Integrated Report gives its ID number as INB0742\_T1001. We find no other entries for a Jenkins Ditch among the Wildcat Creek South Fork tributaries and no listing of a waterbody with the identification number given in the report.

Nor is this an isolated instance of inconsistency between the Consolidated List data and reports of TMDL “success stories.” Table 5 of the Integrated Report lists 10 waterbodies that IDEM says it removed from the 303(d) list when the impairments were corrected, including Jenkins Ditch. The E.P.A has descriptions of several of these on its Section 319 Nonpoint Source Success Stories.<sup>6</sup> The summary for one such waterbody, Big Walnut Creek, says IDEM removed it from the 2010 303(d) list after the implementation of agricultural BMPs corrected its *E. coli* impairments. Yet the 2014 Consolidated Report lists several *E. coli* impairments for Big Walnut Creek. (See entries at 10445, 10452, 10527, 10530, 10535 and 10538.) Similarly the E.P.A website describes the correction of impaired biotic communities in Bull Run and West Creek in Lake County, but the Consolidated List puts Bull Run in Category 5A for aquatic life use, showing a nutrient impairment (entry 7346), and has a listing for West Creek showing no aquatic life use impairment but a 5A listing for impaired biotic communities (7351). (SC)

**IDEM’s Response:** *U.S. EPA’s categorization scheme allows IDEM to place waters with impairments successfully addressed by the measures recommended in a TMDL in Category 2 for the designated use in question, assuming there are no remaining impairments of that use. However, this does not provide a clear way to track improvements resulting from the implementation of a TMDL, which IDEM believes is important. U.S. EPA is working on upgrading its Assessment TMDL Tracking and Implementation System (ATTAINS) database to more accurately track these water quality improvements, which promises to provide states with the data needed to more accurately report and characterize such improvements. In the*

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<sup>6</sup> <http://water.epa.gov/polwaste/nps/success319/>

*meantime, IDEM will continue to report its successes in both the Integrated Report and any associated delistings in its 303(d) listing documentation and is working to resolve the inconsistencies.*

**Comment:** The frequency of errors or confusing entries in the Consolidated List leads us to suspect that the list has become unmanageable. With 12,420 waterbody entries, each of which is placed in a category for at least three and sometimes four uses with 20 possible types of impairments, the list has become a repository of so much data that it may no longer serve a useful purpose. The listing of so many water segments, and the arcane identification numbering system with which IDEM identifies them, are much too complicated to be helpful for the general public. Much of the confusion may be the result of the revision in stream segment identification (the “Reach Index”) that IDEM has worked on since 2008 to accommodate higher resolution maps in the National Hydrography Dataset. The amount of work this has entailed can be judged by the lengthy tables listing changes in stream segmentation. The Notice of Comment Period states that this work is now almost complete. With this chore behind it, we urge IDEM to find a way to simplify the process of reporting waterbody assessments so that both IDEM and the public can determine the condition of our waters and, hopefully, to track their gradual improvement with greater ease. (SC)

**IDEM’s Response:** *IDEM is keenly interested in how it can make the information it provides with the 303(d) list more easily understood and more useful to the public. Including more visual representations of listing information in the form of maps and other types of graphics is important and IDEM will strive to do this for future 303(d) lists.*

**Comment:** In the listings of Category 4B impairments (Appendix H, 303(d) Attachment 2: Status of Category 4 Waters, pp. 2-73 to 2-75), the discussion of the impairments caused by the Picnic Wood Wastewater Treatment Plant (Attachment 2-75) appears to need to be updated. It says the impairments will remain in Category 4B “through the 2012 303(d) listing cycle to allow time for biological communities to recover and for IDEM to conduct the monitoring necessary to verify that their impairment no longer exists.” The 305(b) spreadsheet lists these sections as Category 3 for all uses. If IDEM is conducting the necessary monitoring, it should know whether the impairments continue to exist or not. (SC)

**IDEM Response:** *IDEM has not yet conducted the monitoring required to determine if the biological communities in this waterbody have been restored.*

**Comment:** Beginning on page 2-17 of the TMDL Development Schedules (Appendix H, 303(d) Attachment 1) at line 8 and continuing to page 2-19, line 8, waters listed as being in the Great Lakes basin are identified as being located in Crawford, Clark, Dearborn, Jefferson, Pike, Ripley and Washington counties. These counties in the southern area of the state are not in the Great Lakes basin. At line 14 on page 2-19, the final entry of the Great Lakes basin waters is identified as being in Brown County, which also is not in that basin. We suspect that these obvious errors are the result of faulty manipulation of a spreadsheet that contained this information, which may be another indication that the amount of data IDEM is manipulating to compile the 305(b) and 303(d) lists has become unmanageable.

**IDEM Response:** *These errors were the result of how the data were sorted in Microsoft Excel and have been corrected.*

**Comment:** The Alliance is disappointed that IDEM still maintains 54 ug/L as the phosphorus standard to assess recreational use (aesthetics) in natural lakes and reservoirs. In its responses to the Alliance's comments regarding the 2012 Integrated Report, IDEM acknowledged that a 54 ug/L benchmark was not as strict as the Great Lakes Water Quality Protocol's phosphorus target for Lake Michigan of 7 ug/L but assured the public in 2012 that IDEM's draft criterion of 25 ug/L "is far more stringent" than the 54 ug/L benchmark<sup>7</sup>. However, Indiana has not yet implemented this lower benchmark and is still using the 54 ug/L level that is more than seven times the amount the U.S. has committed for Lake Michigan in the Protocol. Additionally, since Lake Michigan and its shoreline will not be the focus of an Integrated Report for nine more years due to Indiana's nine-year basin rotation method for assessments, adopting a more conservative phosphorus limit would be more beneficial to the ecosystem and communities along Lake Michigan. We recommend that Indiana apply the Great Lakes Water Quality Protocol's phosphorus target for Lake Michigan of 7 ug/L to evaluate recreational use (aesthetics) in Lake Michigan. (AGL)

**IDEM Response:** *IDEM developed its lakes assessment methodology for recreational use (aesthetics) in 2008 based on the results of a study conducted by Limnotech, Inc., which provided the benchmarks currently in use. Since then, IDEM has conducted additional studies to further refine these benchmarks, which resulted in the more stringent values proposed. IDEM has since adopted a different approach to addressing nutrient enrichment in Indiana lakes and reservoirs and, at this time, will not be moving forward with the nutrient criteria proposed. It is important to note that the values currently in use and those more stringent values proposed were based on studies that did not include Lake Michigan and are considered by IDEM to be representative of inland lakes and reservoirs only.*

**Comment:** The evaluation of phosphorus and Chla values as explained in the proposed 2014 CALM<sup>8</sup> ignore the particular importance of dissolved or soluble phosphorus. Given that dissolved reactive phosphorus is bioavailable to stimulate the growth of algae and that different courses of action impact total phosphorus and dissolved phosphorus disproportionately, levels of dissolved phosphorus should be measured alongside total phosphorus and used for impairment decisions. Soluble phosphorus is used as a measurement in the Indiana Trophic State Index for lakes, so the data is already being collected. The IDEM website recognizes Wawasee Area Conservancy Foundation's recommendation for soluble reactive phosphorus: a max of 0.005 mg/L<sup>9</sup>. That recommendation could serve as a starting point for setting an appropriate level for soluble reactive phosphorus. (AGL)

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<sup>7</sup> Indiana Department of Environmental Management, Addendum to Indiana Department of Environmental Management, Office of Water Quality, 2012 303(d) List of Impaired Waters Submitted to U.S. Environmental Protection Agency on April 1 [hereinafter 2012 Appendix I], 2012, I-16.

<sup>8</sup> Indiana Department of Environmental Management, *Indiana Department of Environmental Management's 2014 Consolidated Assessment and Listing Methodology* [hereinafter 2014 CALM], 45 (2014).

<sup>9</sup> Indiana Department of Environment Management, Water Quality Targets, <http://www.in.gov/idem/nps/3484.htm>.

***IDEM Response:*** IDEM will take your recommendation under advisement

*The Lake Wawasee Area conservancy Foundation's recommendation for SRP is provided on IDEM's Nonpoint Source Program website <sup>10</sup> as a benchmark to help watershed groups develop targets for their watershed management plans. In comparison, developing a scientifically defensible assessment methodology for the purpose of implementing the federal Clean Water Act requires far more thorough analysis as the development of IDEM's current assessment methodology illustrates. IDEM considers its present methodology sufficient for determining recreational use support within the context of aesthetics in Indiana's inland lakes and reservoirs but will re-evaluate as we collect and analyze more data for numeric nutrient criteria.*

***Comment:*** IDEM must provide a more detailed evaluation of floating debris, including onshore litter, in order to improve the health of Lake Michigan beaches and waters. Nearshore waters and beaches strewn with dirty cigarette butts, plastic bags, bottles, cans, and the like, are not an inviting foreground for the natural beauty of the lakes. Indiana's Administrative Code calls for the water to "meet the minimum conditions of being free from ... *floating debris*," yet the stated assessment methodology for recreational use of lake waters does not include an evaluation of floating debris. To properly assess compliance with Indiana standards as required by the CWA, IDEM must assess impairment of Great Lakes' shoreline by floating debris. IDEM must evaluate debris data using clear criteria for deciding whether the standard has been attained. Indiana regularly stresses in its 2014 Integrated Report that it is following EPA guidelines, but IDEM ignores EPA's Great Lakes Beach Sanitary Survey (BSS) and recommendations. EPA's BSS, used to assess primary and secondary contact use at Great Lakes' beaches, provides a standardized format and method for the collection of data on beach conditions, including litter/debris. This standardized evaluation tool ensures all beaches are assessed accurately and uniformly. In their evaluation of litter/debris, the BSS measures the amount of litter/debris, both floating and onshore. Additionally, while Indiana evaluated only E. coli levels for recreational use purposes, the EPA recommends that "[b]acteria data should be examined alongside other data collected including weather, rainfall, algae, *debris*, wildlife, flow, and water quality."<sup>11</sup> The Alliance demonstrates how the Beach Sanitary Surveys can be used to collect debris data. Data collection and quality assurance methods used by the Alliance's Adopt-a-Beach<sup>TM</sup> volunteer survey are modeled on EPA's BSS methodology. Based on the Adopt-A-Beach<sup>TM</sup> data, Indiana should list the Lake Michigan shoreline as impaired due to floating debris. Beyond the BSS, IDEM could evaluate available data of the volume of floating debris collected in catch basins and in stormwater systems. Data on trash collected from stormwater runoff is readily available from smaller agencies in the area. For example, Indiana University Northwest collects information on both inorganic and organic debris. (AGL)

***IDEM Response:*** The approaches described by the Alliance for the Great Lakes for the development of an assessment methodology unique to the Lake Michigan shoreline merit IDEM's

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<sup>10</sup> 327 IAC 2-1.5-8(b)(1).

<sup>11</sup> U.S. Environmental Protection Agency, Great Lakes Beach Sanitary Survey User Manual, 6-11 (2008) (Emphasis added), available at [http://water.epa.gov/type/oceb/beaches/upload/2008\\_05\\_29\\_beaches\\_sanitarysurvey\\_usermanual.pdf](http://water.epa.gov/type/oceb/beaches/upload/2008_05_29_beaches_sanitarysurvey_usermanual.pdf).

*consideration, and IDEM agrees that such a methodology would likely improve IDEM's ability to better characterize the degree to which the shoreline supports recreational use. However, using these data would first require the development of a scientifically sound and defensible assessment methodology. As noted in IDEM's response to the previous comment, such an effort would be complex and resource intensive and must necessarily be balanced with other OWQ priorities. For the 2016 cycle, IDEM's priority with regard to assessment methodology development is to develop more robust methods for evaluating drinking water use support. The use of Beach Sanitary Surveys and other similar types of information remains on IDEM's candidate list of methodology issues to explore for future development.*

**Comment:** The Alliance requests that IDEM identify and list Jearse Park Beach as impaired due to excessive algae levels. According to the Indiana Administrative Code, "All surface waters within the Great Lakes system at all times and at all places...shall meet the minimum conditions of being free from ... scum attributable to municipal, industrial, agricultural, and other land use practices."<sup>12</sup> The Code also prohibits discharges that are "in concentrations or combinations that will cause or contribute to the growth of aquatic plants or algae to such degree as to (i) create a nuisance; (ii) be unsightly; or (iii) otherwise impair the designated uses."<sup>13</sup> It is commonly known that algae is a problem at Jearse Park beach.<sup>14</sup> Scientific studies of Jearse Park have also identified algae as a problem at Jearse Park beach.<sup>15</sup> The Alliance's Adopt-A-Beach<sup>TM</sup> volunteers continue to survey Indiana's Lake Michigan shoreline and have found high levels of algae along the nearshore waters of Jearse Park Beach that are not reflected on Indiana's impaired waters list. 2013 Adopt-a-Beach<sup>TM</sup> data for Indiana's Lake Michigan shoreline is included with these comments for your review. (AGL)

**IDEM Response:** *Developing an assessment methodology for Lake Michigan beaches presents a unique problem as water quality is likely far different from that of the open waters of Lake Michigan. As noted before, IDEM does not consider the benchmarks currently in use for making recreational use support assessments within the context of aesthetics representative for Lake Michigan. IDEM does have information on average chlorophyll a concentrations for the different basins in Indiana, which could be used as an indicator of algal conditions. However, these were derived from data collected from flowing waters, not beaches.*

*The example data provided by the Alliance for the Great Lakes represents a potentially valuable data set that IDEM could use to determine the degree to which Lake Michigan and its beaches support recreational use support within the context of aesthetics. However, as noted in IDEM's response to the previous comment, using these data for the purposes of making a designated use support assessment requires the development of a scientifically sound and defensible assessment methodology.*

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<sup>12</sup> 327 IAC 2-1.5-8(b)(1) (emphasis added).

<sup>13</sup> 327 IAC 2-1.5-8(b)(1)

<sup>14</sup> See "Students pitch in to clean up Jearse Park Beach," NWI Times (May 5, 2013)(" Often covered with trash and algae, many gulls are drawn to the beach, further impacting water quality.") online at: [http://www.nwitimes.com/news/local/lake/east-chicago/students-pitch-in-to-clean-up-jearse-parkbeach/article\\_70dc2ad7-37a9-59b9-8f16-db282b0107ce.html](http://www.nwitimes.com/news/local/lake/east-chicago/students-pitch-in-to-clean-up-jearse-parkbeach/article_70dc2ad7-37a9-59b9-8f16-db282b0107ce.html)

<sup>15</sup> See Richard Whitman, "What Can Empirical Observations and Numerical Modeling Tell us About Beach Contamination?" ("Algae is an Issue at Jearse Park") online at: <http://www.glin.net/gliba/pdf/2012conf/Whitman-USGS.pdf>

*While there are currently no plans to develop an assessment methodology specific to Lake Michigan beaches, IDEM would be very interested in working with the Alliance for the Great Lakes to obtain any data it has through the External Data Framework (EDF). Methodology development begins with data and a partnership with the Alliance through the EDF would allow IDEM to more easily evaluate the data the Alliance has to share for this purpose.*

### **References Cited in IDEM's Responses**

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- U. S. Environmental Protection Agency. (2015). *FY 2016-2017 Draft National Water Program Guidance.* [http://www2.epa.gov/sites/production/files/2015-02/documents/fy\\_2016-2017\\_nwpg\\_narrative\\_2015.pdf](http://www2.epa.gov/sites/production/files/2015-02/documents/fy_2016-2017_nwpg_narrative_2015.pdf)